

# **Top 10 Mistakes Made in Managing Project Risks**

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**Project Management Workshop**

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# Presenter

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- >35 years of projects experience

- Engineering
- Construction Management
- Project Controls
- Estimating
- Contracting
- Portfolio, Program & Project Management



**Joe Lukas**

PMP, PE, CSM, CCP

- Project types include information systems, product development, construction and manufacturing



# Presentation Objective

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- This presentation will help improve your use of risk management on projects
  - By covering the top ten mistakes project teams make in dealing with project risks...
  - ...Along with risk management best practices to avoid these mistakes



# Risk Definition

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- The *possibility* of suffering harm or loss (American Heritage Dictionary)
- The *potential* for the realization of unwanted, negative consequences of an event (Rowe)
- Both general risk definitions above focus on the negative aspects of risks!
- **Project Risk:** an *uncertain future* event that, if it occurs, has a positive or negative effect (impact) on one or more project objectives



# Top 10 Risk Mistakes

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1. Not considering opportunities – just threats
2. Confusing risk causes, risk events & impacts
3. Using checklists and not ‘scanning the horizon’ for other risks
4. Understating risk impacts, and not scaling the impacts based on project drivers
5. Not using 100% probability during planning



# Top 10 Risk Mistakes *(continued)*

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6. Not considering sensitivity with risk analysis
7. Calling risk response planning 'mitigation'
8. Not considering contingency plans when doing risk response planning
9. Not making specific project team members responsible for specific risk events
10. Not making managing risks an on-going process



# Mistake #1

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## Not Considering Opportunities – Just Threats

- Risk Management is the process of identifying, analyzing, and responding to *all* project risks
- Need to consider risk probability and impacts with a goal to:
  - maximize for *positive* events
  - minimize for *adverse* events

**RISK = OPPORTUNITIES & THREATS**



# Ignoring Opportunities Example

## Not Considering Opportunities – Just Threats

Client example of risk management procedure being used to manage projects

Risk Management Plan Guidelines

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6	PROJECT TEAM RESPONSIBILITIES.....	2

*This procedure totally ignores opportunities!*



# Examples of Opportunities

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- Special pricing offered by a supplier
- Competitive market conditions for a specific service
- Sudden availability of a key resource for a short time period due to their project being postponed
- Availability of some needed equipment (such as servers or desktop computers) from another company downsizing their operations
- Availability of an government investment tax credit for work done before a specified date



# Mistake #2

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## Confusing Risk Causes, Risk Events & Impacts

- Common error during risk identification: failing to distinguish among the *causes* of risk, genuine *risk events*, and the *impacts* of risks
- **Result:**
  - Teams confuse risks events with causes
  - Not dealing with the most important risks
  - Harder to develop risk response plans



# Causes-Risk Events-Impacts

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- **Causes:** Definite events or sets of circumstances that exist in the project or its environment and which give rise to uncertainty
- **Examples:**
  - Doing a project in a developing country
  - Using unproven technology
  - Lacking skilled personnel



# Causes-**Risk Events**-Impacts

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- **Risk Events:** Uncertain activities that, if they occur, will influence the project objectives
- **Examples:**
  - Exchange rate fluctuations
  - Contractor delivery
  - Client expectations misunderstood



# Causes-Risk Events-**Impacts**

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- **Impacts:** Unplanned variations from project objectives (positive or negative) which are a result of risks occurring
  
- **Examples:**
  - Milestone date missed
  - Budget under-run
  - Failure to meet performance target



# Causes-Risk Events-Impacts Format

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- Risks events have **one unique** dimension: uncertainty (described as “probability” or “likelihood” of occurrence”)
- Need to maintain a clear separation between **Causes, Risk Events, and Impacts**

**Format:** <sup>(1)</sup> ***Due to <cause>, <risk event> could occur, resulting in <impact>***

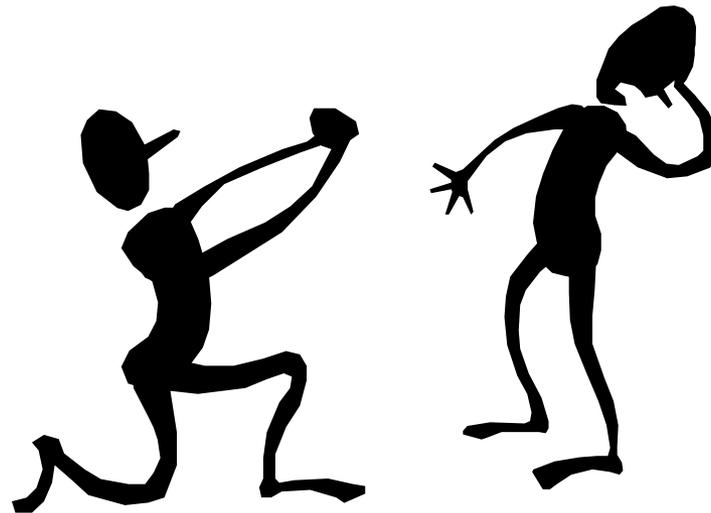
<sup>(1)</sup> *Project Risks, Identifying Causes, Risks and Effects*, Dave Hillson, PMP, PM Network, September, 2000



# Risk Identification Example 1

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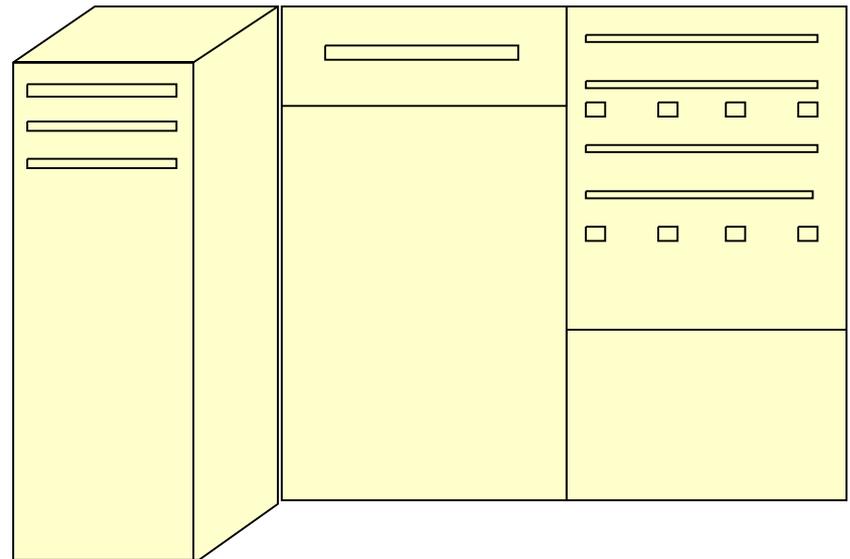
**Due to** *<the many job opportunities for top-notch programmers>*, *<the loss of key project personnel>* **could occur, resulting in** *<higher costs and a longer schedule>*



# Risk Identification Example 2

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**Due to** *<other systems projects underway>*, *<a lack of space to support the new application on existing servers>* **could occur, resulting in** *<the need to purchase a new server>*



# Risks Identification Table

CAUSE	RISK EVENT	IMPACT			
		Cost	Time	Func't	Qual
Need to purchase equipment from foreign supplier 	Exchange rate fluctuation	✓			
Doing a project in a foreign country 	Equipment held up in customs	✓	✓		
Lack of skilled equipment mechanics 	Mfg. equipment improperly installed	✓	✓	✓	✓



# Risk Identification Tool

Causes	Category = Legal Risks			Impacts
1	<i>a lawsuit against the Department of Health and/or the Homeowners Association</i>			Cost
4				Time
5				Quality
	P = 20%	I = 10	RF = 2.0	Function

Risk Causes
1.
2.
3.
4.
5.
6.
7.

*Keep risk causes on separate sheet*

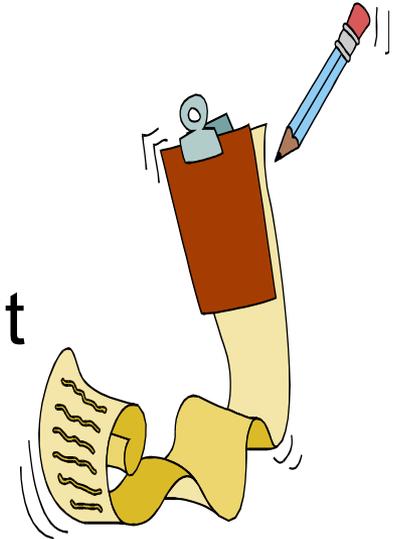
*Use post-It notes set-up as shown to capture and analyze risks*



# Mistake #3

## Using Checklists & Not 'Scanning the Horizon'

- **Checklists** – listings of risk events typically encountered on a specific type of project...but some teams don't consider what's not on the list!



- Also use **Brainstorming** – free flow of ideas to generate a listing of other potential risk events that may occur



# Mistake #4

## Understating Risk Impacts, and Not Scaling Impacts Based on Project Drivers

- Four possible consequences to any risk event:
  - Cost
  - Schedule
  - Functionality
  - Quality



- Need to look at the impact for all four areas

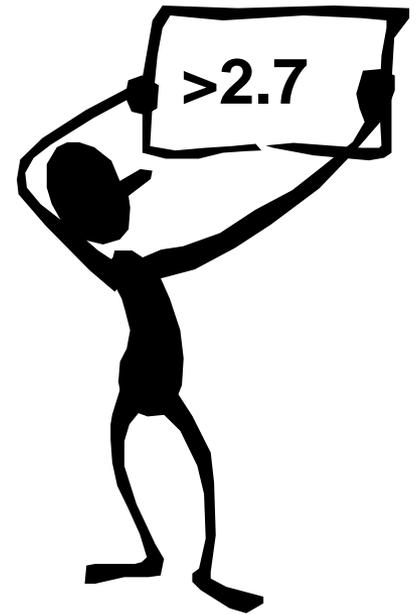


# Calculating the Risk Score

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- Each risk event is assigned values for probability & impact (*and other factors can also be used*)
- Risk Score is calculated using a formula
- Simplest formula is **P x I**
- For risk scores  $>$  threshold, risk response planning done



# 'Neutral' Project Impact Scale

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<u>Impact Value</u>	<u>Cost</u>	<u>Schedule</u>	<u>Functionality</u>	<u>Quality</u>
10	5% variance	5% variance	Major Issue	Major Issue
8	4% variance	4% variance	Medium Issue	Medium Issue
6	3% variance	3% variance	Minor Issue	Minor Issue
4	2% variance	2% variance	Very Small Issue	Very Small Issue
2	1% variance	1% variance	-	-

***Need to consider relative importance of project impacts  
(are all impacts weighted equal?)***



# Weighted Project Impact Scale

<u>Impact Value</u>	<u>Cost</u>	<u>Schedule</u>	<u>Functionality</u>	<u>Quality</u>
10	Very high Impact	-	Major Issue	Major Issue
8	High Impact	-	Medium Issue	Medium Issue
6	Medium Impact	Major Impact	Minor Issue	Minor Issue
4	Low Impact	Medium Impact	Very Small Issue	Very Small Issue
2	-	Low Impact	-	-
0	-	-	-	-

What is the impact value for this risk?

2.0

4.0

4.5

8.0

Use the highest value!

8.0



# Mistake #5

## Not Using 100% Probability During Planning

<u>Probability</u>	<u>Description</u>
1.0	Certain to occur (100%)
0.9	Almost certain to occur (>90%)
0.7	Highly likely (>70%)
0.5	Likely (>50%)
0.3	Low likelihood (<30%)
0.1	Very unlikely (<10%)
0.0	No chance



# Mistake #5

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## Not Using 100% Probability During Planning

- Can have 100% probability during planning phase, but the project team needs to take actions to reduce it below 100%; if not possible must adjust the project plan based on that ‘factual item’
- Example: due to the very heavy workload in the client area making key personnel unavailable, key requirements will be missed, resulting in...
- Question for the team: what actions can be taken to reduce this risk event to <100% probability?



# Mistake #6

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## Not Considering Sensitivity with Risk Analysis

### Risk Simulation

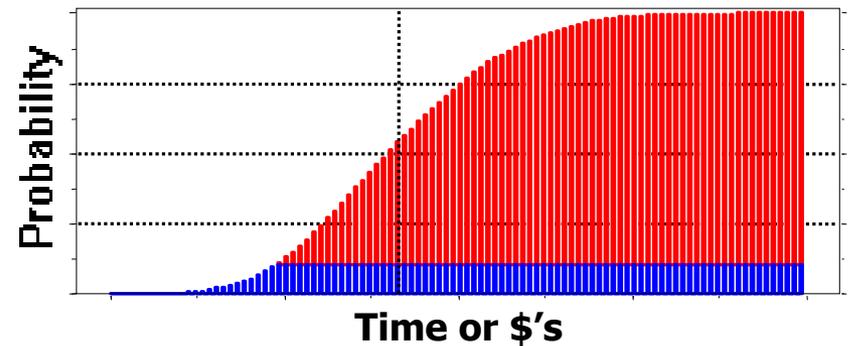
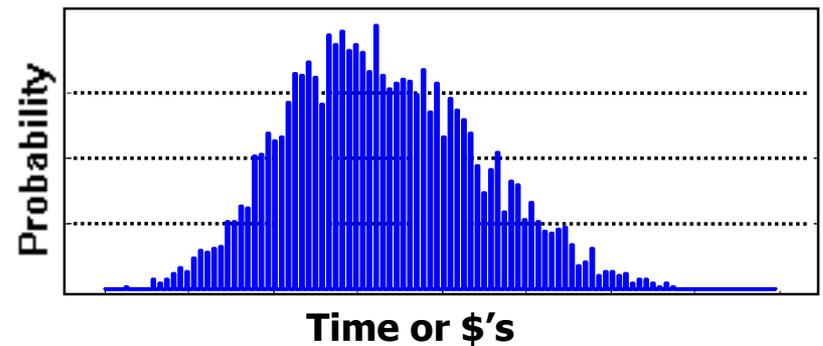
- Improves project risk management by determining the biggest risks for risk response planning
- Helps team, client & other stakeholders to better understand project
- Improves estimate (cost & schedule) accuracy and contingency amount based on an acceptable risk level



# Risk Simulation Software

## Risk analysis software provides:

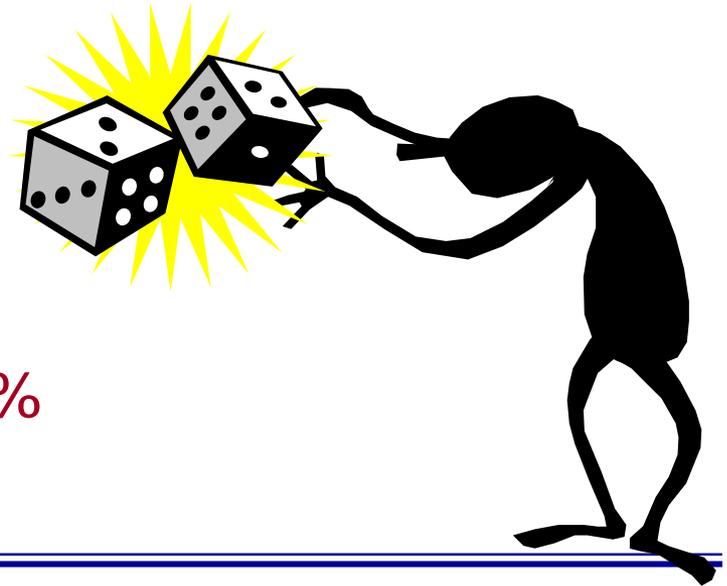
- Frequency of probable cost or schedule outcomes
- Cumulative cost or schedule with overrun probabilities



# Risk Simulation 'Problem'

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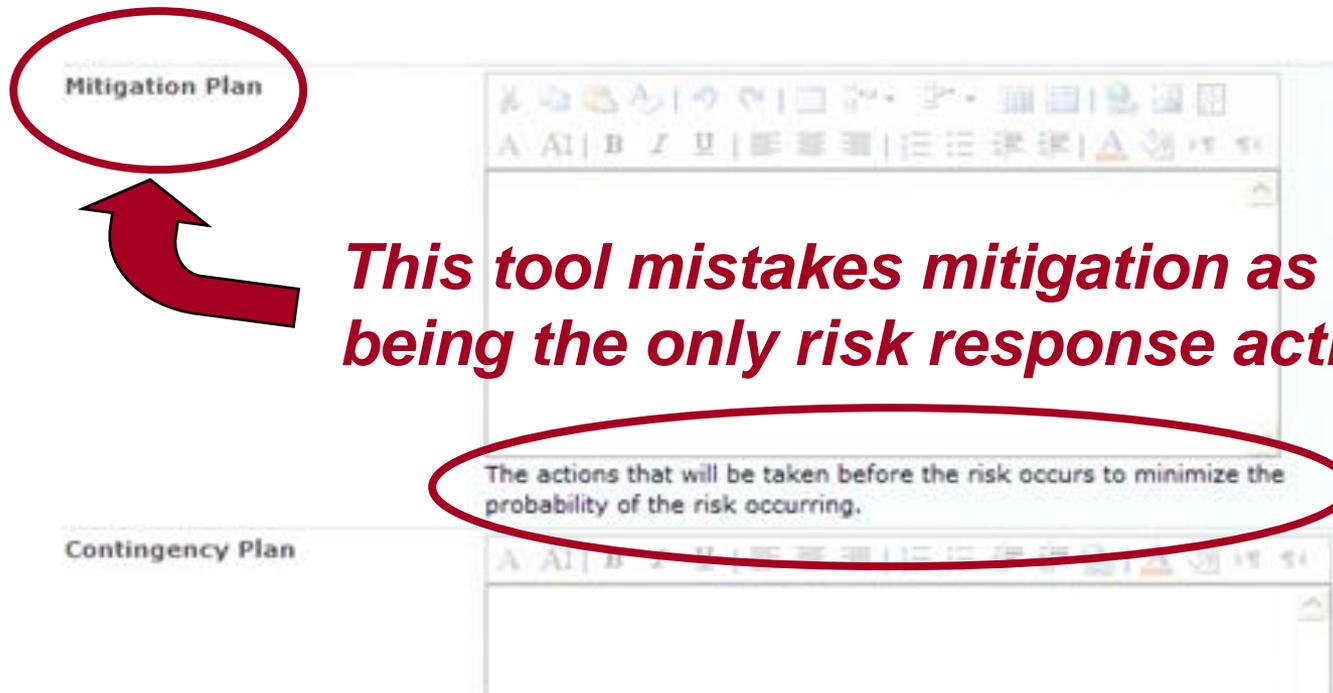
- Project team needs to assign most likely, optimistic and pessimistic values to each risk:
  - There is a **BIG** tendency to understate risk impact!
  - One option: define standards for risk ranges to minimize debate
    - ◆ Low = -5% to +10%
    - ◆ Medium = -10% to +50%
    - ◆ High = -20% to +100%
    - ◆ Very High = -30% to +300%



# Mistake #7

## Calling Risk Response Planning 'Mitigation'

Client example of risk management tool being used to document project risks



***This tool mistakes mitigation as being the only risk response action!***



# Mistake #7

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## Calling Risk Response Planning ‘Mitigation’

- The ‘product’ of risk management is called the **Risk Register** and it includes:
  - List of identified risks
  - Analyzed & prioritized risks
  - Risk response and contingency plans
- The ‘product’ of doing risk management is not...
  - Risk Management Plan
  - Mitigation Plan
  - Risk Assessment



# Risk Response Techniques

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## For Threats:

- Avoid
- Transfer
- Mitigate

## For Opportunities:

- Exploit
- Share
- Enhance

## For Both:

- Acceptance
- Contingency Plans



# Avoidance & Exploit

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- **Avoidance:** eliminating specific threats by eliminating the causes

- **Exploit:** Seeks to provide definitive causes that will allow risk realization for an opportunity



# Transfer & Share

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- **Transfer**: contractual agreements (typically fixed price) used to reassign negative risks to others



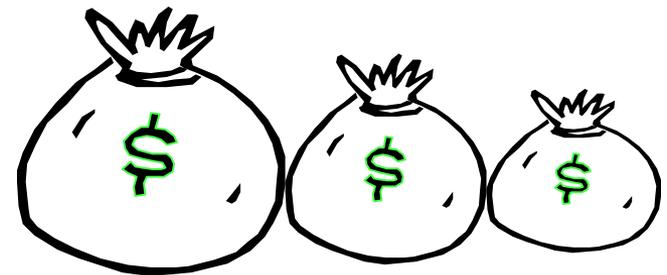
- **Share**: allocating ownership of an opportunity (typically with an incentive fee) to a third party who is best able to capture the benefit for the project



# Mitigate & Enhance

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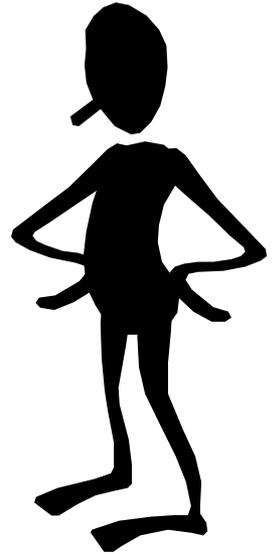
- **Mitigate**: reducing the risk factor by reducing the probability of occurrence and/or the risk event impact
- **Enhance**: make the risk event more likely by increasing the probability of occurrence and/or the risk event impact



# Acceptance

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- Applies to both opportunities and threats since seldom possible to eliminate all threats or take advantage of all opportunities
- Can be **passive acceptance** – do nothing
- Can be **active acceptance** - developing a contingency plan and/or reserve (time, money and/or resources)



# Mistake #8

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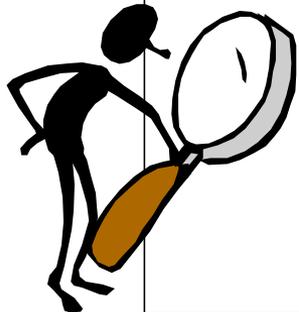
## Not Considering Contingency Plans

- Risk responses are actions taken to make the risk event more likely to occur (for opportunities) or less likely to occur (for threats)
- Contingency plans are actions taken ***when the risk event is imminent or just happened***
- Risk response ***planning*** should consider both!



# Risk Event Example #1

Causes	Category = Legal Risks			Impacts
4	<i>Missing key project requirements</i>			Cost
				Time
				Quality
	P = 90%	I = 10	RF = 9.0	Function



Risk Causes
1. Hot job market for top-notch programmers
2. Lack of internal training resources
3. Large number of active IS projects
4. Limited availability of key client personnel

**Mitigation Plan:** Include in resource plan activities, hours & dates for key client SMEs; get management commitment to make requirements SME #1 priority

**Contingency Plan:** If key resources not available, elevate to sponsor



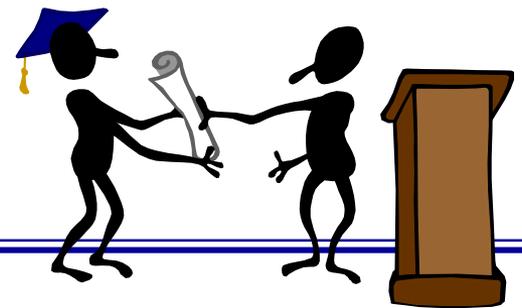
# Risk Event Example #2

Causes	Category = Legal Risks			Impacts
2	<i>System launch without needed training/reference materials</i>			Cost
				Time
	P = 95%	I = 10	RF = 9.5	Quality
				Function

Risk Causes
1. Hot job market for top-notch programmers
2. Lack of internal training resources
3. Large number of active IS projects
4. Limited availability of key client personnel

**Transference:** Get proposals from vendor training companies and award contract for training & reference materials

**Contingency Plan:** None needed



# Mistake #9

## Not Making the Project Team Risk Owners

The project manager should involve the project team in owning project risks!

Risk Register							
Project Title: New Project Portfolio System				Project ID: B004			
Completed By: Joe Lukas				Project Manager: Mimi Hoke			
Date Completed: 14-May-04				Status Date: 14-May-04			
#	RISK EVENT	P	I	R P x I	ASSIGNED TO	RISK PLANNING (RESPONSE & CONTINGENCY PLANS)	STATUS
1	incomplete user functional requirements	0.9	10	9.0	Mimi	<b>Mitigation:</b> Get commitment from Business Sponsor on making key users available for requirements definition. <b>Contingency:</b> If users don't show up, send absent list to Business Sponsor for follow-up phone calls.	Specific dates and times for JAD sessions being planned. Will look for firm commitments on attendance.
2	contractors being hired who are not familiar with Sunoco systems	0.7	8	5.6	Mimi	<b>Mitigation:</b> Contact preferred supplier and try to reserve Sunoco experienced contractors. <b>Transference:</b> consider using a fixed price contract on this project.	Working with Purchasing and supplier on staffing plan.
3	lack of justification for this project at a 20% return	0.2	10	2.0	Joe	<b>Avoidance:</b> Do sensitivity study early in project to ensure this is a viable project. <b>Mitigation:</b> recheck business financials every time the project estimate is updated.	Next project estimate update planned for June, will update business case at same time.



# Mistake #10

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## Not Making Managing Risks an On-going Process



**Not a one-time event!**

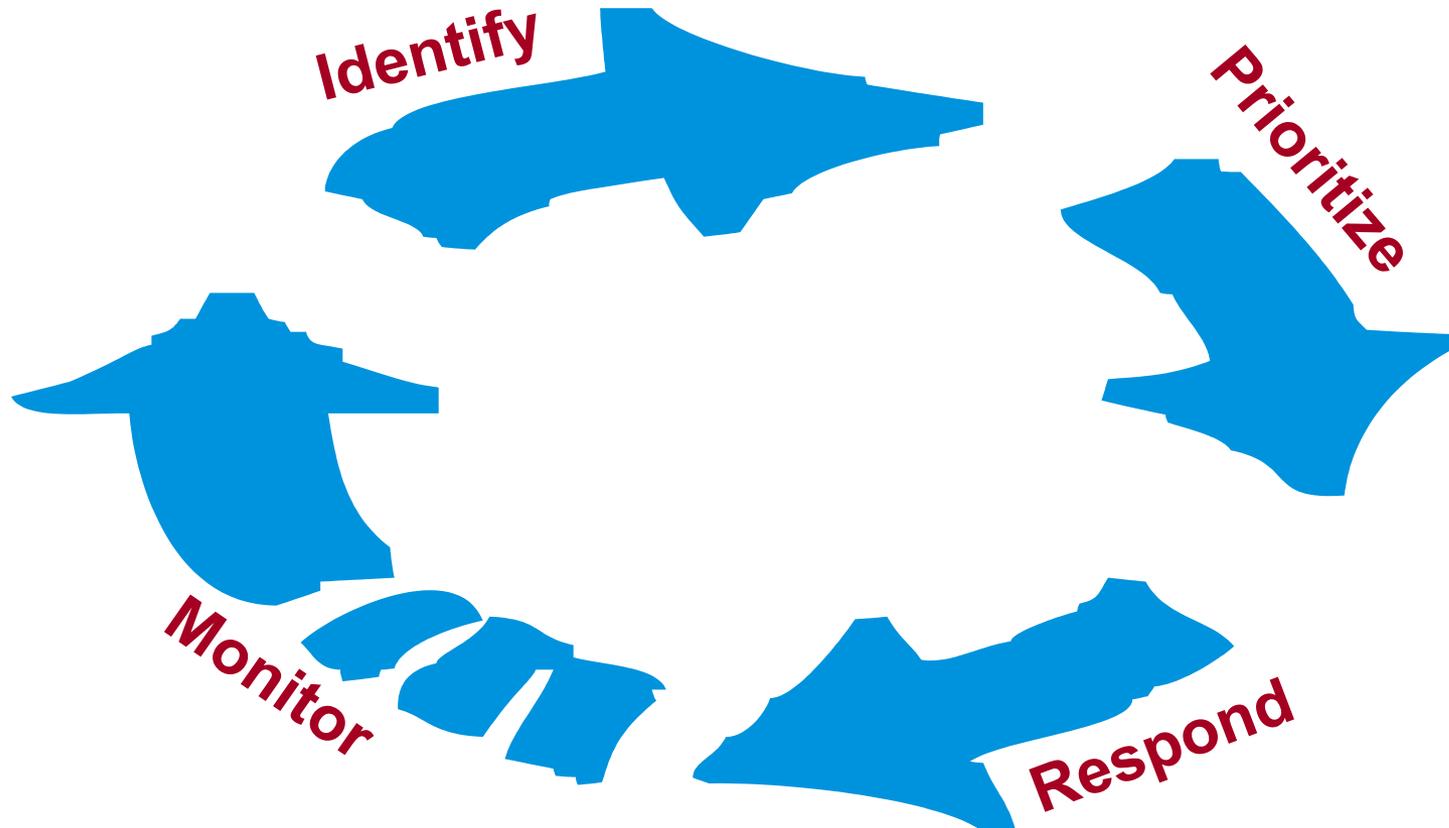


# Risk Mgt. – a Continuous Process

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## I-P-R-M



# Mistake #10

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## At each team meeting....

- Ask if any new risks are ‘on the horizon’
- Check to see if any risk triggers and/or risk events occurred
- Update status on implementation of risk plans
- Update probability and impact values based on actions taken
- Evaluate effectiveness of actions taken in managing risks



# Conclusion

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- Watch for the common risk management mistakes outlined in this presentation
- Establish a risk management procedure with supporting templates for your company – don't leave it up to each Project Manager to 'invent' a process and/or tools



# Questions???

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